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ABSTRACT

A study examined the effects of the level of knowledge of a second language (linguistic factor) and of the level of familiarity of texts based on cultural scripts (cultural factor) on comprehension. Subjects, 111 young adults whose average age was 23 years, were divided into 3 groups according to their different levels of linguistic knowledge. Two of the groups (an intermediate and a superior group) were made up of subjects with English as a mother tongue who were attending courses in French as a second language. A third group consisted of subjects with French as a mother tongue and served as a control group. Subjects made delayed recognition judgments after reading a familiar and an unfamiliar text (both in French) of equal difficulty. Results indicated that, no matter whether the information was explicit, implicit, or incongruent elaboration, or whether the text was familiar or unfamiliar, the control group and the experimental group comprising subjects of superior linguistic ability exhibited no differences in the recognition tests. Results also indicated that members of the intermediate group (possessing limited linguistic knowledge of the target language) were at a disadvantage in memorizing explicit information, recognizing implicit information, and correctly judging incongruent elaborations. (Three tables of data are included.) (RS)

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LINGUISTIC AND CULTURAL FACTORS IN TEXT COMPREHENSION

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LINGUISTICS AND ~~COGNITION~~ Cultural Factors IN TEXT COMPREHENSION

INTRODUCTION

The schemata as well as the script are mental representation consisting of cognitive units, which the subject possesses in relation to objects, situations or events. From Bartlett's (1932) we know that recall involves a reconstruction process based on cognitive representation, which in turn is dependent on the interests, attitudes (Anderson and Pichert 1978, Kintsch and Van Djik 1978) and culture of the individuals involved. Thus the elements in Bartlett's story which were particular to the Indian culture were difficult for American subjects to understand, to such an extent that they tended, by various processes (omission, elaboration, rationalizing), to integrate them in such a way as to make them correspond with cultural structures with which they were more familiar.

Later on, Kintsch and Greene (1978) demonstrated that some American students retained more elements of the "macrostructure" of a fairy tale (recall of the elements of the plot = 86%) than elements of the macrostructure of an Apache legend (recall of the elements of the plot = 43%). In a similar experiment conducted among Montagnais Indians and Gaspesians, Freibergs and Poissant (1984) discovered significative differences in recall of an American Indian myth and a Gaspesian fairy tale. At the macropropositional level, each group had a better recall of the story originating in their respective cultures. These results conform to the notion that the comprehension and the recall of a story are facilitated by the possibility of resorting to an adequate culturally conditioned story schema.

Various studies in the field of the acquisition of a second language tend to demonstrate that both, the level of linguistic knowledge of a language and the

underlying cultural elements in a text, influence the comprehension of a text read in a second language (see Johnson 1981, 1982, Barnitz, 1986). In his study, Johnson analyzed the effects of the complexity of the English langage: complex or simplified, and the cultural origin content of the texts: Iranian or American, on comprehension, by a group of Iranian students who were studying English as a second language. Recall measurements show that the Iranian subjects were better able to retain the information contained in the text pertaining to their own culture. Also, more events were recalled from the simplified text of the American story than from the complex text but, no such difference is found between the simplified and the complex texts of the Iranian story. Thus the lack of linguistic competence combined with the absence of a familiar schema, had a negative effect on the recall of the American story. In the absence of an adequate schema, readers could not discern, in the text, important clues which would have guided their recall. Thus the passages in the text, which appeared ambiguous because of the limited linguistic knowledge of the subjects could not be clarified by resorting to an adequate schema. In fact, when a text contains a theme which is familiar to the culture of an individual learning a second language, this individual is able to decode the meaning by applying certain hypotheses on the content and then activating the process of linguistic analysis.

The present study focusses on the respective effects of the level of knowledge of a second language (linguistic factor) and of the level of familiarity of texts based on cultural scripts (cognitive factor) on comprehension. Basing ourselves on previous works concerning scripts and on the fact that subjects wrongly recognize as explicit information what are in fact plausible inferences, (see Bower et al. 1979, Abbott et al. 1985) we present the following hypotheses. The average recognition ratings of implicit information differ in accordance with the levels of familiarity of the texts and the linguistic knowledge of the readers. A familiar script-based text should elicit higher

average rates than a non-familiar script-based text. Furthermore, the subjects in a control group, consisting of readers with French as a mother tongue, should obtain higher average rates in the recognition tests than readers for whom French is a second language.

METHOD

111 young adults (average age = 23 years) were divided into three groups according to their different levels of linguistic knowledge. Two of the groups were made up of subjects with English as a mother tongue and who were attending courses in French as a second language: Superior (n=28) and Intermediate (n=48). The other group consisting of subjects with French as a mother tongue, formed the Control group (n=35). The material comprises two texts based on different cultural scripts and equivalent from the point of view of difficulty, since they contain an equivalent number of semantic propositions. Two recognition tests are also used for each story. Each test contains 30 sentences representing: explicit information (n=10), implicit information (n=10) and incongruent elaborations (n=10). The subjects make delayed recognition judgments after having read the familiar text and the unfamiliar text.

RESULTS

Recognition judgments of explicit information. The average ratings of recognition judgments of explicit information for the Control, Superior and Intermediate groups are the following: 3.84, 3.85 and 3.57. On the other hand, the average ratings of recognition judgments of explicit information for familiar and unfamiliar texts are the following: 3.77 and 3.7, see table 1.

Place table 1 here

It can therefore be seen that the Control and Superior groups obtain high and closely related recognition ratings, whereas the Intermediate group is clearly different with

significantly lower ratings. Furthermore, familiarity or unfamiliarity of the text seems to have very little effect on the recognition judgments. The analyses of variance support this finding. There is, in fact, a significant difference between the levels of linguistic knowledge ($F=4.65$, $df=2$, $p<.01$). However, there exists no significant difference in the familiarity factor ($F=1.94$, $df=1$, $p>.05$) nor in the interaction between factors ($F=1.21$, $df=2$, $p>.05$).

Recognition judgments of implicit information. The average ratings of recognition judgments of implicit information for Control, Superior and Intermediate groups are the following: 2.76, 2.56 and 2.95. Furthermore, the average ratings of recognition judgments of implicit information for familiar and unfamiliar texts are as follows: 2.66 and 2.85, see table 2.

Place table 2 here

Thus, contrary to our initial hypothesis, it can be seen that the Intermediate group is the one which obtains the highest recognition judgments, followed by the Control group and then by the Superior group. Moreover, the unfamiliar text elicited higher recognition judgments than the familiar text, which is also in contradiction with our forecasts. In fact, there is a significant difference between the levels of linguistic knowledge ($F=5$, $df=2$, $p<.01$) as well as between the levels of familiarity of texts ($F=7.58$, $df=1$, $p<.01$). There is, however, no interaction between the level of linguistic knowledge and familiarity ($F=1.37$, $df=2$, $p>,05$).

Recognition judgments of incongruent elaborations. The average ratings of recognition judgments of incongruent elaborations for the Control, Superior and Intermediate groups are as follows: 2.06, 1.87, and 2.38. Furthermore, the average ratings of the recognition judgments of the incongruent elaborations for familiar and unfamiliar texts are the following: 1.8 and 2.4, see table 3.

Place table 3 here

It can be seen that the Superior group is the one which obtains the best recognition ratings (lowest ratings), followed by the Control group and then by the Intermediate group. Furthermore, the familiar text seems to elicit better ratings than the unfamiliar text since the subjects have a greater tendency to reject the incongruent elaborations in the first case. In fact, there is a significant difference between the levels of linguistic knowledge ($F=10,.92$, $df=-2$, $p< .001$) as well as between the types of text ($F=102.58$, $df=1$, $p< .001$). There is however no evidence of a significiant interaction between these factors ($F=.91$, $df=2$, $p>.05$).

DISCUSSION

A few general conclusions can be drawn from the above results. First of all, it is to be noted that the groups with superior linguistic knowledge, i.e. the Control and Superior groups, do not exhibit any differences, in any of the above cases, in their performance in the recognition tests. In fact, no matter what type of information was judged: explicit, implicit or incongruent elaboration, and the nature of the material presented: familiar and unfamiliar text, no significant differences appear between these groups. However, the Intermediate group stands out from the two other groups in several situations.

Explicit Information: Thus, it is noted that the fact that a reader possesses limited linguistic knowledge of a second language (Intermediate group) seriously affects the memorization of explicit information when this information comes from a text relating unfamiliar events. This group of readers is at a disadvantage in relation to the two other groups when it comes to this type of material. Their poor linguistic competence combined with the presence of material for which they do not possess the underlying script, are responsible for their difficulty to find in their memory information which was

previously presented in a text. The presentation of familiar material seems to compensate for the weaknesses in linguistic knowledge, since the performance of the Intermediate group was similar to that of the other groups when the text contained a familiar underlying script.

Implicit information: Furthermore, we expected that implicit information would elicit higher recognition ratings from the groups who have a good grasp of the second language or whose mother tongue is the same as the language of the texts. As a rule, the recognition of implicit information reflects comprehension, since these inferences correspond to the plausible inferences found in the text. Thus a false recognition of inferences or a high recognition rating is generally considered an indication of an adequate comprehension of the text. The results indicate, contrary to our hypotheses, that the Intermediate group is more apt than the Superior group to obtain high recognition ratings as regards implicit information; in this case, the Control group showed no significant difference from the Intermediate or Superior groups. However, it is only when the Intermediate group is presented with familiar material that this tendency is significant; otherwise, in the case of unfamiliar material, this group is no different from the others. Thus when the Intermediate group deals with familiar material, it is in a position to draw inferences so that, it is capable of surpassing the performance of the Superior group, but not that of the Control group, which has an average recognition rating lying between that of the Superior group and that of the Intermediate group (Control: 2.73, Superior: 2.39 and Intermediate: 2.87).

Incongruent elaborations: As in the case of the recognition of explicit information, we find that the fact that the reader possesses limited linguistic knowledge of a second language elicits a higher rate of recognition errors on his part. The subjects in the Intermediate group tend, in fact to falsely judge the incongruent elaborations as

having actually appeared in the source text, as compared to the subjects in the Control and Superior groups. This tendency manifests itself even more clearly in the case of unfamiliar material, since the Intermediate group differs here from the both Control group and the Superior group. These results, similar to those for explicit information, demonstrate that the presentation of unfamiliar material has a negative effect on the performance of the readers who do not have a complete grasp of the second language. The presentation of unfamiliar material causes a decrease in the performance of all three groups.

Generally speaking, it can be concluded that the presentation of unfamiliar material negatively affects the performance of the different groups and more particularly that of the Intermediate group, that is, readers which still possess limited knowledge of the second language.

Table 1

Average ratings of recognition judgments for explicit informations in relation to the levels of linguistic knowledge: Control, Superior, and Intermediate and to the levels of familiarity: Familiar and Unfamiliar, n= number of subjects (standard deviations)

Levels of linguistic knowledge	Levels of familiarity		Averages
	Familiar	Unfamiliar	
Control n=35	3.88 (.70)	3.79 (.60)	3.84
Superior 11 n=28	3.83 (.52)	3.86 (.40)	3.85
Intermediate 111 n=48	3.67 (.58)	3.47 (.50)	3.57
Averages	3.77	3.71	3.74

1= have not been read
5= have been read

Table 2

Average ratings of recognition judgments for implicit informations in relation to the levels of linguistic knowledge: Control, Superior, and Intermediate and to the levels of familiarity: Familiar and Unfamiliar, n= number of subjects (standard deviations)

Levels of linguistic knowledge	Levels of familiarity		Averages
	Familiar	Unfamiliar	
Control n=35	2.73 (.70)	2.78 (.63)	2.76
Superior 11 n=28	2.39 (.65)	2.73 (.65)	2.56
Intermediate 111 n=48	2.87 (.66)	3.03 (.52)	2.95
Averages	2.66	2.85	2.76

1= have not been read
5= have been read

Table 3

Average ratings of recognition judgments for incongruent elaborations in relation to the levels of linguistic knowledge: Control, Superior, and Intermediate and to the levels of familiarity: Familiar and Unfamiliar, n= number of subjects (standard deviations)

Levels of linguistic knowledge	Levels of familiarity		Averages
	Familiar	Unfamiliar	
Control n=35	1.75 (.58)	2.37 (.63)	2.06
Superior 11 n=28	1.62 (.56)	2.11 (.57)	1.87
Intermediate 111 n=48	2.03 (.53)	2.72 (.55)	2.38
Averages	1.80	2.40	2.10

1= have not been read
5= have been read

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ABSTRACT

Linguistic and cultural factors comprehension.

by Hélène Poissant and Linda de Serres

From data on grammar of stories, we know that the degree of structuration of a narrative has been positively related to its recall (Thorndike, 1977, Mandler & Johnson 1982). The mode of stucturation appears to be culture-specific. Thus, Brémond (1964; 1966), Dundes (1964) and Colby (1970) have delineated typical story schemas for occidental, Amerindian and Eskimo tales respectively. Kintsch & Greene (1978) found American students better at preserving the gist of a Grimm tale than that of an Apache tale over 5 successive retellings. Mandler et al. (1980), however, found no difference in recall between a Vai tale and four occidental ones for their Liberian subjects. Nevertheless Poissant (1982) and Freibergs and Poissant (1984) found differences in a study addressing the culture-specificity of story schemata. The Montagnais Indian myth "Tsheshei" and a French fairy-tale from Gaspé (equated for number of words and number of semantic propositions) were heard by eight adult monolingual Montagnais Indians and twelve monolingual francophones from Gaspé. All subjects had little or no schooling. There was a trend for each group to recall more propositions from the tale of their own culture. At the macropropositional level (elements representing the gist of a story) each group showed significantly better recall for the story from their own culture. More recently, Dallé (1988) conducted an experiment with children from Cameroun using two script-based stories, one from the American culture and one from the African culture. Addressing the question of the respective roles of sociolinguistic factors such as attitude toward foreign language and cognitive factors such as degree of cultural familiarity, Dallé (1988) found the last factor to be most determinant in story recall.

In this experiment we are addressing the question of linguistic factor (degree of bilingualism: intermediate, superior levels and control) versus cultural familiarity factor (familiar or non familiar). The degree of bilingualism is established with a standard test which is used to grade the Canadian english speaking students starting french courses at l'Université Laval ("Test Laval formule B 1976"). The

degree of cultural familiarity of texts is established by the construction of two script-based texts both written in french: "L'Halloween" (familiar text) and "La fête du mouton" (unfamiliar text). Texts are equivalent in number of sentences and semantic propositions. The young adults students (18-35 years old) have to read the two stories and do a recognition test after each one. Assuming that a cognitive factor such as familiarity with the text is a determinant in story comprehension, we hypothesize that subjects who are familiar with the story will perform better then the subjects who are not familiar with the story. On the other hand, if the linguistic factor appears also to be a determinant, the superior and control (= french as mother tongue) subjects should perform better than the intermediate subjects.